

# BACHELOR OF SCIENCE, MAJOR IN CHEMISTRY FOR PROFESSIONAL CHEMISTS

**Additional information:** Reference the Program Landing Page (<https://www.shsu.edu/programs/bachelor-of-science-in-chemistry/>) for additional information, such as cost, delivery format, contact information, or to schedule a visit.

Code	Title	Hours
<b>Bachelor of Science, Major in Chemistry for Professional Chemists</b>		
<b>Core Curriculum</b> ( <a href="https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/">https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/</a> )		
Component Area I (Communication)		6
Component Area II (Mathematics) <sup>1</sup>		3
Component Area III (Life and Physical Science) <sup>2</sup>		8
Component Area IV (Language, Philosophy, and Culture)		3
Component Area V (Creative Arts)		3
Component Area VI (U.S. History)		6
Component Area VII (Political Science/Government)		6
Component Area VIII (Social and Behavioral Sciences)		3
Component Area IX (Component Area Option) <sup>1, 3</sup>		4
<b>Degree Specific Requirements</b>		
ENGL 3330	Introduction to Technical Writing	3
MATH 1420	Calculus I <sup>1</sup>	4
MATH 1430	Calculus II	4
PHYS 1301 & PHYS 1101 or PHYS 1411	General Physics-Mechanics and Heat and General Physics Laboratory I Introduction To Physics I	4
PHYS 1302 & PHYS 1102 or PHYS 1422	General Physics-Sound, Light, Electricity, and Magnetism and General Physics Laboratory II Introduction To Physics II	4
UNIV 1101	Bearkat U <sup>3</sup>	1
<b>Major: Foundation</b>		
CHEM 1411	General Chemistry I <sup>2</sup>	4
CHEM 1412	General Chemistry II <sup>2</sup>	4
CHEM 2323 & CHEM 2123	Organic Chemistry I: Lecture and Organic Chemistry I: Lab	4
CHEM 2325 & CHEM 2125	Organic Chemistry II: Lecture and Organic Chemistry II: Lab	4
CHEM 2401	Quantitative Analysis	4
CHEM 3367	Inorganic Chemistry	3
CHEM 3438	Biochemistry I	4
CHEM 4100	Professional Communication in Chemistry	1
CHEM 4260	Advanced Chemistry Lab	2
CHEM 4327	Polymer Chemistry	3
CHEM 4367	Advanced Inorganic Chemistry	3
CHEM 4395	Undergraduate Research In Chemistry	3
CHEM 4440	Instrumental Analytical Chemistry	4
CHEM 4448	Physical Chemistry I	4
CHEM 4449	Physical Chemistry II	4
<b>Electives: General</b>		
General Electives		11
<b>Electives: Advanced</b>		
Advanced Electives <sup>4</sup>		8

**Minor: Not Required**<sup>4,5</sup>**Total Hours****120**

- <sup>1</sup> MATH 1420 satisfies the Core Curriculum requirement for Component Area II (Mathematics) and the one credit hour Core Curriculum requirement for Component Area IX (Component Area Option) as well as the Degree Specific requirement.
- <sup>2</sup> CHEM 1411 and CHEM 1412 satisfy the Core Curriculum requirement for Component Area III (Life and Physical Science) and the Major requirement.
- <sup>3</sup> UNIV 1101 satisfies the one credit hour Core Curriculum requirement for Component Area IX (Component Area Option) and the Degree Specific requirement. Students may seek an exception from the Department of Chemistry to substitute an elective course for UNIV 1101 in the Degree Specific Requirement.
- <sup>4</sup> A minor is not required but can be paired with this major. A minor generally requires six semesters of coursework, a minimum of 18 credits (six advanced) in an approved field. Students should use elective and minor hours to satisfy the 42 advanced hour requirement. Advanced hours are 3000- and 4000-level courses. A minor in MATH, as a common example, requires 10 additional hours beyond MATH 1420 and MATH 1430.
- <sup>5</sup> The following minor cannot be paired with this degree program: Minor in Chemistry. Any other minor, including Advanced Chemistry, can be paired with a Chemistry major.

**Notes**

Students must earn a 2.0 minimum overall GPA in all coursework.

Students must meet a 2.0 minimum overall major GPA in all major coursework.

Students must earn a 2.0 minimum SHSU GPA in all coursework.

Students must meet a 2.0 minimum SHSU major GPA in all major coursework.

A grade of C or higher is required

for CHEM 1411, CHEM 1412, CHEM 2123, CHEM 2125, CHEM 2323, CHEM 2325, CHEM 2401, CHEM 3367, CHEM 4448, and in all required Physics and Mathematics courses.

Students should use elective and minor hours to satisfy the 42 advanced hour requirement. Advanced hours are 3000- and 4000-level courses. A minor is not required with this major but can be added and will normally fill most electives. A minor generally requires six semesters of coursework, a minimum of 18 credits (six advanced) in an approved field. A minor in MATH, as a common example, requires 10 additional hours beyond MATH 1420 and MATH 1430.

**First Year**

<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>
CHEM 1411 <sup>1</sup>		4 Component Area IV ( <a href="https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiv">https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiv</a> )	3
ENGL 1301 <sup>2</sup>		3 CHEM 1412 <sup>1</sup>	4
HSTY 1301 <sup>3</sup>		3 ENGL 1302 <sup>2</sup>	3
MATH 1420 <sup>4</sup>		4 MATH 1430	4
UNIV 1101 <sup>5</sup>		1	
		<b>15</b>	<b>14</b>

**Second Year**

<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>
CHEM 2323 & CHEM 2123		4 CHEM 2325 & CHEM 2125	4
CHEM 2401		4 ENGL 3330	3
CHEM 3367		3 General Electives <sup>6</sup>	4
PHYS 1301 & PHYS 1101 (or PHYS 1411)		4 PHYS 1302 & PHYS 1102 (or PHYS 1422)	4
		<b>15</b>	<b>15</b>

**Third Year**

<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>
CHEM 3438		4 Component Area V ( <a href="https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav">https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav</a> )	3
CHEM 4448		4 Component Area IX ( <a href="https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix">https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix</a> )	3
General Electives <sup>6</sup>		4 CHEM 4449	4
POLS 2305 <sup>7</sup>		3 General Electives <sup>6</sup>	3
		POLS 2306 <sup>7</sup>	3
		<b>15</b>	<b>16</b>

**Fourth Year**

<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>
Advanced Electives <sup>6</sup>		4 Component Area VIII ( <a href="https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii">https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii</a> )	3
CHEM 4100		1 Advanced Electives <sup>6</sup>	4
CHEM 4327		3 CHEM 4260	2
CHEM 4440		4 CHEM 4367	3
HSTY 1302 <sup>3</sup>		3 CHEM 4395	3
		<b>15</b>	<b>15</b>

**Total Hours: 120**

<sup>1</sup> Satisfies the Core Curriculum requirement for Component Area III (Life and Physical Science) and the Major requirement.

<sup>2</sup> Satisfies the Core Curriculum requirement for Component Area I (Communication).

<sup>3</sup> Satisfies the Core Curriculum requirement for Component Area VI (U.S. History).

<sup>4</sup> Satisfies the Core Curriculum requirement for Component Area II (Mathematics) and the one credit hour Core Curriculum requirement for Component Area IX (Component Area Option) as well as the Degree Specific requirement.

<sup>5</sup> UNIV 1101 satisfies the one credit hour Core Curriculum requirement for Component Area IX (Component Area Option) and the Degree Specific Requirement.

<sup>6</sup> Students should use elective and minor hours to satisfy the 42 advanced hour requirement. Advanced hours are 3000- and 4000-level courses. A minor is not required with this major but can be added and will normally fill most electives. A minor generally requires six semesters of coursework, a minimum of 18 credits (six advanced) in an approved field. A minor in MATH, as a common example, requires 10 additional hours beyond MATH 1420 and MATH 1430.

<sup>7</sup> Satisfies the Core Curriculum requirement for Component Area VII (Political Science/Government).

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The Texas Higher Education Coordinating Board (THECB) marketable skills initiative is part of the state's **60x30TX plan** and was designed to help students articulate their skills to employers. Marketable skills are those skills valued by employers and/or graduate programs that can be applied in a variety of work or education settings and may include interpersonal, cognitive, and applied skill areas.

The BS in Chemistry for Professional Chemists is designed to provide graduates with the following marketable skills:

- Work safely with standard chemicals in a chemistry laboratory.
- Keep thorough and accurate records of chemistry experiments.
- Write final research reports and orally present results of experiments.
- Analyze and interpret experimental data, including spectrophotometric data.
- Understand the use of the major methods of purification of chemical compounds, including chromatographic techniques.